The CreationStation

An Innovative Approach for Producing Instructional Technology and Distance Education Materials

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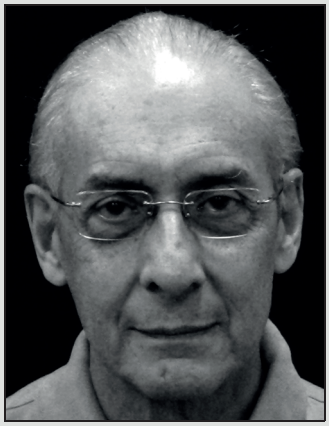
Introduction

In the educational sector, be it at the K–12 level, in higher education, in distance education via online or videoconferencing, or in corporate training, teachers and instructors are permanently striving to identify the best or most efficient teaching methods that can support instructional goals. Among several options, the use of technology has proven to be a way for significantly enhancing instructional processes and thus favorably influencing effective learning.



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The field of using technology in education has several avenues; among them is the use of media such as instructional videos for improving the overall instructional experience, facilitating the understanding of sometimes-complex concepts. In the context used here, instructional videos are videos of short duration, and may include demonstrations, or instructions on how to complete a specific task (Shipper, 2013). This means that student learning is positively impacted when the appropriate instructional videos are used.

Although instructional videos of all kinds are widely available on websites such as YouTube, these options may not always fit the particular design or content needs of a teacher or a corporate trainer. As this is often the case, a viable alternative is for teachers and instructors to create their own instructional videos.

However, it is well known that the production of instructional videos is a challenging task, due to diverse factors such as cost and availability of the required equipment, having the skills for using the equipment, making a storyboard, finding the appropriate producing environment, looking for and putting together, photos, video clips, narration, sound effects, and more. According to Donker (2011), video editing technology was formerly considered to be very expensive, as well as time consuming

and difficult to operate; however it has recently become more user-friendly and cost effective and has found multiple applications in areas other than education, such as sales and marketing, advertising, healthcare, arts, music, entertainment, tourism and more.

Reflecting the scenarios above mentioned at the local level in Palm Beach County, Florida, the Palm Beach County Library System, through its 17 branches, bookmobiles, and outreach services, has answered repeated requests from patrons that besides the current desktop computers and Internet access services that have always been offered throughout the library system, they would like to have access to digital media services so they can create video, audio, podcasts, and image editing among other possibilities.

With the above in mind, the Palm Beach County Library System has recently opened, at the Main Library Branch in West Palm Beach, a digital multimedia lab and recording studio that has been called the CreationStation, where interested users, including teachers and instructors, using leading-edge technology, for free and in one place, can create a number of instructional materials such as videos, podcasts, and more for delivery via distance education or for classroom use (Palm Beach County Library System, 2014).

The Role of Technology in Instructional Media

The opening of the CreationStation fills a void that for years has existed among teachers and instructors in Palm Beach County in the sense that for the lack of access to the appropriate technologies, they were very limited for using digital media for producing instructional materials, like instructional videos, tailored to their particular needs, and were restricted to whatever videos were found on the Internet, combining existing different videos in the best possible way, something that in many occasions is less than satisfactory for educational purposes. Working at the CreationStation, a combination of media types can be used for creating specific learning outcomes, using components like text, audio, video, graphics, animations, and other possibilities giving as a result a motivating learning environment.

The desirability of using technology-based instructional materials has arisen from the impressive growth of technology since the 1950s, that in one way or another has affected our daily routines in a personal or professional manner, and teaching and learning are no exceptions. For this reason, at educational institutions and at the corporate level, the existence of information technologies has impacted the methods by which instruction is provided (Ryan, 2003). According to Ausburn (2004) the acceptance of learning technologies has led to significant changes in the environment upon which students learn and training is provided.

The use of digital media for creating content for classroom use and corporate training requires a new way of thinking about how instruction is provided. Technology offers many tools for providing instruction that comes with strengths and weaknesses that need to be understood by teachers using technology to teach (Horton, 2006). This is the case of digital media like instructional videos. As Jegan and Eswaran (2004) noted, multimedia elements should be designed for multiple uses and chunked into learning modules so that they can be effectively used in a dynamic training environment. Media, as in the case of instructional videos, must be carefully designed, selected and implemented for the specific application where it will be used. Audio and video, as Toth (2003) noted, can provide a stimulating content to the student in an easy-to-understand and familiar manner and can have a significant impact on the quality and success in distance education or in the classroom.

Chamers and Lee (2004) state that teaching using media and various technology methods requires a different skill set than teaching using traditional classroom methods, as frequently traditional instructors do not have the necessary skills. The lack of adequate training and skills can negatively affect teaching and training programs, leading to students' frustration.

New instructional technologies, including those incorporating the use of digital media, give rise to opportunities for delivering content in the classroom or online. These new methods can be overwhelming or challenging sometimes, but to avoid situations like this, it is necessary to have a basic understanding of the technologies involved and of the instructional tools available at the CreationStation, where training is also provided, This will be of great help for teachers and instructors with the kind of tools that they may need to make the job much easier.

The CreationStation

The CreationStation is now available for creating a variety of instructional materials for distance education or classroom use, among many other applications. This venue has been recently opened in West Palm Beach at the main branch of the Palm Beach County Library System. The CreationStation will not only provide the equipment for people to use, but they can also learn how to use the equipment (Palm Beach County Library System, 2014).

The idea was conceived after library patrons using any of the 17 library branches in the Palm Beach County Library System (PBCLS), approached librarians asking for training and the possibility of having access to digital media tools in the same manner that they always had training courses and access to desktop computers and the Internet. This situation gave rise to the formation of a central committee made up of library staff from all levels so that they could sketch out a vision of what could be offered in terms of training and the kind of equipment that would be required to support these new activities. The initial focus was that of helping people in the Palm Beach County community to create original content that they would be willing to share either on a special website, or in the classrooms or online in the case of educational applications.

The committee members realized that areas for using digital technologies could be making audio, videos, podcasting, music, and other activities for which there was plenty of space available at the Main Branch of the PBCLS. The initial hurdle was to get adequate financing, as the PBCLS was unable to provide funds for such a project. Committee members then researched possible funding opportunities, approaching the Community Foundation of Palm Beach and Martin Counties that administers the Knight Foundation Fund, destined in part to fostering informed and engaged communities.

The funding request was approved by the Knight Foundation, and once the financial hurdle was cleared, the members of the committee started initial planning efforts by contacting selected public libraries nationwide for collecting ideas and information about digital media labs, what kind of equipment they had, how large their labs were, and asked for any kind of advice that they could offer. With this information, it was determined that the CreationStation should be inside the main library of the PBCLS, which would be less expensive.

As the project was satisfactorily advancing, the next steps on the tasks list were to create a marketing plan, to decide about the minimum required equipment, building a website, designing a logo, creating an "elevator speech," training library staff, reaching out to community groups most likely to use the CreationStation, using social media for helping to establish an identity separate from that of the library, contacting vendors for quotes, putting out equipment to bid, and other tasks.

This venue has all the state-of-the-art tools required for creating and editing videos, making professional sound recording, podcasts, photos, transferring VHS, photo negatives, and slides to digital, mixing digital music, and much more. The CreationStation fills a void in Palm Beach County for a digitally literate society, as the local community not only has free access to multimedia equipment, but can receive free training, while at the same time a platform for sharing creations is provided.

There is an impressive array of equipment and software that is available for users at the CreationStation. The hardware list includes an 27″ iMac, two 21.5″ iMacs, an Epson V600 scanner, a Plustek 7500i slide/film scanner, a Canon A3500 digital camera, an Alesis QX25 keyboard, a Focusrite Scarlett 2i2 Audio Interface, a Huion H610 Drawing Tablet, several external hard drives and flash drives, a GoPro Hero 3+ camcorder, a Canon Vixia HF R42 camcorder, a Blue Yeti microphone, a green screen, and several lighting fixtures.

The CreationStation has multiple software options that can be used with the equipment above mentioned such as iPhoto, iMovie, Garage Band, iTunes, Audacity, Final Cut Pro X, Adobe Photoshop Elements, Adobe Creative Cloud that includes Illustrator, InDesign, Dreamweaver, Adobe Premiere, After Effects, Acrobat XI Pro, Adobe Muse, Edge Tools & Services, Encore, Fireworks, Manga Studio 5 EX, and Apple's Pages (word processing), Numbers (spreadsheets), and Keynote (presentations). The CreationStation also has a subscription to Lynda.com so that both patrons and staff can have access to online tutorials for any of the equipment and software.

Media Types at the CreationStation

Among the many possibilities that this new venue has to offer, and in view of the focus of this article, various forms of media required for creating instructional videos for both distance education delivered online or for classroom use, and that are available at the CreationStation will be discussed. The descriptions that follow include: text, audio, video, graphics, and animations.

Text

Text is a basic—if often overlooked—element in video presentations. Text is easy to create and edit, using any word processor, the font and format can be easily set, and using the copy and paste options in can be added into the body of the video where text may be needed to further explain a concept. In this case, the text should be brief, preferably using bullet points or very short paragraphs. The type of fonts should be kept to a minimum, not more than two or three. For online use, it must be taken into consideration that text looks different online than in a printed format. For creating text at the CreationStation there are three iMac computers as mentioned above.

Audio

It is well established that audio in any of its many forms is very effective for keeping the attention of the students and for making a better presentation of instructional materials. Because teachers and instructors use their voice for teaching, they should possess good skills for creating and recording audio, after they receive appropriate training and information about the fundamentals of recording audio and the respective editing process so that the audio production may have a professional sound.

The first three steps in the audio recording process correspond to a preparation stage, in which a script should be written, choosing after that a few lines that are meant to be read and that correspond to what must be said for each clip. There should be a practice session so that the actual reading can take place smoothly

without interruptions. Simultaneously the audio recording equipment should be tested. The next steps consist of recording, removing noises that may be present, adjusting the desired volume, with testing the audio output after that. At this point, the editing process should be done. Finally, the resulting product should be converted to a desired format.

There are a good number of software tools, some of them available for free, for making quality recording and audio editing. Among the options available at the CreationStation, Audacity from SourceForge.net has features that serve well the purposes of audio recording and editing. There is a tutorial for Audacity at the CreationStation explaining in detail this tool and how to use it. However, for high quality audio recording and editing two features are very important: the noise removal tool and the adjustment of the volume. Special attention should be given to these two tools. Consideration to the type of audio file format should also be given depending on the intended use of the audio production and where it is going to be used. Working inside the CreationStation has the advantage of being a noise-free environment as there are number of panels that absorb noise, and there are high quality microphones for recording.

Video

Video is perhaps the most important media type for explaining many types of concepts in instructional settings, either online or in the traditional classroom. A video clip can be a very useful teaching tool, and it is very powerful for describing something in action or complex in nature. Videos can be classified in diverse categories, but regardless of that they are very beneficial in circumstances such as teaching science, where in chemistry for example, virtual labs are safe, and in a chemical reaction at the molecular level, details that cannot be seen in an actual lab can be appreciated and better understood. Teachers frequently help with the subject matter in a video, playing the role of actors, or they even can create their own miniproductions for basic concepts. For the latter purpose, instructors should become familiar with the video equipment to be used, they should understand the respective software, and should learn basic video techniques.

At the CreationStation, with the digital video resources available, high quality videos can be produced. In spite of the obvious advantages when video is used, care should be exercised, as videos have some disadvantages like big size when compared to other media types, producing and editing videos is time consuming, and can be costly if a third party is involved in the process.

At the CreationStation the most popular video and editing software is iMovie. With it, it can be easy to combine clips and conduct simple editing that looks professional. Videos can be captured and edited so that instructional clips can be created for online or for the classroom using an easy drag and drop procedure, adding photos, titles, transitions, sound effects, and scrolling credits.

As with audio, video can be stored in different formats, with the type of format depending on the use of the video, the software tools available for creating and editing and, in the case of classroom use, the equipment the students are going to have. Some formats require a special video player, also called a plug-in, for users to be able to view a video in particular equipment.

Since one of the main purposes for using a video is for further explaining instructional content, any excess in using videos should be avoided, and care should be taken to ensure that videos have solid instructional content. And, every video should have stop, fast forward, and rewind controls, as students may want to

watch a segment several times for understanding better certain concepts.

Graphics

Certain diagrams, charts, tables, scanned photographs, digital images, and clip art, or other images that can be seen in a two-dimensional format are called graphics. They may vary from simple graphics like an arrow to complex ones like a digital image of a building or a bridge. Graphics can enhance content presentation or for supporting other media types like text or audio.

With the digital camera and the scanners that are available at the CreationStation, graphics for teaching or training purposes can be created in many ways using the also available Adobe Photoshop graphics editing program. Simple graphics or clip art can also be used and are easily available over the Internet.

For instructional and other purposes, a basic understanding about how graphics work on a computer is in order. When a picture is seen, it is viewed as having a particular size, but once it is scanned into a computer it is a different thing, as the computer sees the picture in the form of a number of dots that are called pixels, and in this manner an image that corresponds to a picture has a size that is defined by a certain number of pixels in height and in width. What is called the resolution is the number of dots or pixels in one inch of a stored image, a value that is called dpi or dots per inch. The higher this number is, the better the quality of the image.

With the above considerations in mind, it follows that having an image at a high resolution guarantees a high quality for certain applications, but with a pixel being represented by information that needs to be stored in a computer, the higher the resolution, the file will be much larger. The intended final use of an image that is related to its resolution, will determine the file size. This will affect in turn the time it takes to download images to a computer, and the time it takes to see an image with a high resolution. This is also related to the connection speed of the computer being used.

Images are also affected by how a computer displays a graphic, as a computer monitor is limited to display a given number of pixels per inch, generally 72 or 96 pixels per inch, and a high resolution graphic like one with 300 dpi will not be displayed any better than an image having 96 dpi. Screen size is also important, as it is related to the resolution of the screen, which is the number of pixels displayed on the screen. This can be set in the display properties of the monitor, with the most common settings being 800 × 600 pixels or 1024 × 768 pixels. When all of the above mentioned components of a computer image are well understood, managing graphics is an easier task.

Animation

Animation is the capability to make something on a computer screen appear to move (Mylott, 2008). This effect can be very helpful for illustrating how something works, by providing the element of movement which is very useful for instructional or training purposes, which contrasts with other media elements like graphics or text that are static. Some types of animations can be created at the CreationStation with some of the software programs that are available, but most of the time this requires rather complex procedures.

However, some simple animations can be created using the GIF format that is used for graphics. What appears to be motion is obtained when a number of similar pictures are stored one on top of each other, with the image at the top visible and the others are hidden, when the animation is quickly played one image at a time, then the image appears to be moving. This procedure works for simple graphics only.

Other simple animations that are commonly used on the Internet are called Flash animations, with a well-known example being the banners seen on the top of a webpage. They are small in size and can be seen on any computer that has installed the Flash Player.

As with all other media components mentioned, animations should have instructional value, and must not be a distraction, should be shown one at a time to avoid confusion, and should help students to focus on a particular concept or procedure. Animations used for teaching science or math science or as part of training programs are very complex and are beyond the scope of this article.

Conclusion

In an age of revolutionary information technology, a key role is played by public institutions that are central to the dissemination of the latest technologies available, so that the public at large can have easy and free access to the instructional technologies that will make them better educated. One outstanding initiative, called the CreationStation, has been recently opened in Palm Beach County, Florida, so that area residents can have access to digital media technologies that can be used for personal, governmental, business, and educational purposes.

This article has dealt with the diverse instructional applications that can be developed at the CreationStation. Teachers and instructors in the area can now take advantage of this new facility for creating digital content so they can be more successful in achieving educational goals through better learning outcomes online or in classrooms. This new venue in Palm Beach County will surely benefit a community in need of better educational opportunities.

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